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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,325	11/10/2003	Hideki Kuwajima	YAO-4337US4	5061

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EXAMINER

LETSCHER, GEORGE J

ART UNIT PAPER NUMBER

2653

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 10/705,325	Applicant(s) KUWAJIMA ET AL.	
	Examiner George J. Letscher	Art Unit 2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29,31-39 and 41-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29,31-39 and 41-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/774,347.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/10/03, 2/24/04</u> . | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
6) <input type="checkbox"/> Other: _____ |
|---|--|

Status

1. Claims 30 and 40 are canceled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 29, 31-39 and 41-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koganezawa et al (US 6,327,120) in view of Stefansky et al (US 6,222,706).

The aforementioned claims recite the following features, inter alia, disclosed in Koganezawa et al: A disk apparatus comprising a disk (not shown), a head for performing recording and/or reproduction, a head support mechanism including a slider (4), a slider holding plate (94) for holding the slider with a pair of substrates each having a piezoelectric element attached thereto, a pair of elastic hinges (95) for connecting the slider holding plate and the substrates. A pair of transformation operation portions, i.e., conductor substrate portions, has a conductor pattern for transferring a recording/reproducing signal to and from the head. The load beam has regulating portions regulating rotation of the slider holding plate. The flexure and slider of the suspension assembly is rotated in the yaw direction around a center position of an air bearing surface by the contraction and/or expansion of at least one of the piezoelectric elements. See Figures 39, 42, 46-52 of Koganezawa et al.

Regarding claims 29, 32 and 39, Koganezawa et al does not show a dimple on a tip of the load beam for supporting the slider holding plate so that the holding plate is rotated in a pitch, roll and yaw direction. Regarding claims 29 and 39, Koganezawa et al do not teach the slider rotated around *a dimple* in the yaw direction by the contraction and/or expansion of at least one of the

piezoelectric elements. Regarding claims 29 and 39, Koganezawa et al do not disclose the dimple either coincides with the center of gravity of a portion including the slider holding plate and the slider or is located between the center of gravity of the portion and the head. Regarding claims 37 and 45, Koganezawa et al do not expressly show the pair of substrates and piezoelectric elements being coated with resin.

Official notice is taken of the fact that resin coated substrates and piezoelectric elements were notoriously old and well known at the time the invention was made.

Stefansky et al disclose a disk drive suspension assembly having a load beam accompanying a slider holding plate (42) and a dimple (60) on the load beam for supporting the slider holding plate and the slider (24) so that the slider holding plate is rotated in a pitch, roll and yaw direction. The slider is rotated around a dimple in the yaw direction by the contraction and/or expansion of at least one of the piezoelectric elements. Stefansky et al show the dimple either coinciding with the center of gravity of a portion including the slider holding plate and the slider or is located between the center of gravity of the portion and the head via microactuator pivot located near the center of mass of the microactuating structure; see column 8, lines 60-67 of Stefansky et al. See Figures 2, 6 and 13-17 of Stefansky et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the disk suspension assembly of

Koganezawa et al with a load beam dimple for supporting the slider holding plate and the slider rotating around the dimple as taught by Stefansky et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to have provided the disk suspension assembly of Koganezawa et al with a load beam dimple for supporting the slider holding plate and the slider rotating around the dimple as taught by Stefansky et al since one of ordinary skill in the art wanted to ensure that the head was maintained in close proximity with the surface of the disc; see column 4, lines 38-42 of Stefansky et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the suspension assembly having a yaw directed slider assembly via piezoelectric elements as shown in Koganezawa et al with the slider rotated around *a dimple* in the yaw direction by the contraction and/or expansion of at least one of the piezoelectric elements as taught by Stefansky et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to have provided the suspension assembly having a yaw directed slider assembly via piezoelectric elements as shown in Koganezawa et al with the slider rotated around *a dimple* in the yaw direction by the contraction and/or expansion of at least one of the piezoelectric elements as taught by Stefansky et al since it allowed the head on the slider to be finely positioned over a selected radial track of the rotating disc; see column 6, lines 2-16 of Stefansky et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the disk suspension of Koganezawa et al with a dimple either coinciding with the center of gravity of a portion including the slider holding plate and the slider or is located between the center of gravity of the portion and the head via microactuator pivot located near the center of mass of the microactuating structure as taught by Stefansky et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to have provided the disk suspension of Koganezawa et al with a dimple either coinciding with the center of gravity of a portion including the slider holding plate and the slider or is located between the center of gravity of the portion and the head via microactuator pivot located near the center of mass of the microactuating structure as taught by Stefansky et al since one of ordinary skill in the art knew it allowed the pivot to be designed with more stiffness than other microactuator designs and further reduced susceptibility to shock and vibration; see column 8, lines 66-67 to column 9, lines 1-2 of Stefansky et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have furnished the disk suspension assembly having piezoelectric elements with substrates as shown in Koganezawa et al with resin coated substrates and piezoelectric elements. The rationale is as follows: one of ordinary skill in the art would have been motivated to have furnished the disk suspension assembly having piezoelectric elements with

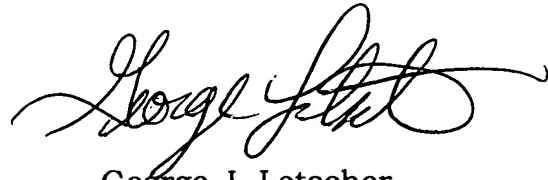
substrates as shown in Koganezawa et al with resin coated substrates and piezoelectric elements since one of ordinary skill the art readily knew at the time the invention was made that resin coatings on elements such as piezoelectric and substrate materials was a well-known way to protect the materials from electrostatic discharge (ESD) effects, thereby enhancing the reliability of the load suspension assembly.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George J. Letscher whose telephone number is 703-305-7912. The examiner can normally be reached on Conventional.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 703-305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "George J. Letscher", with a stylized, flowing script.

George J. Letscher
Primary Examiner
Art Unit 2653

GJL
2/21/05